

**Article Title:** Effectiveness of Resistance Training and Associated Program Characteristics in Patients at Risk for Type 2 Diabetes: a Systematic Review and Meta-Analysis.

**Journal name:** Sports Medicine

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## Electronic Supplementary Material File 1 Search strategy

### Pubmed

- **Search entry-** ("Prediabetic State"[Mesh] OR prediabetes (tiab) OR hyperglycemia (tiab) OR "impaired fasting glucose" (tiab) OR "impaired glucose tolerance" (tiab) OR "glucose intoleran\*" (tiab) OR "insulin resist\*" (tiab) OR "impaired plasma glucose" (tiab) OR "metabolic syndrome" (tiab) OR dysglycemia (tiab) OR "impaired glucose regulation" (tiab) OR "insulin insensitiv\*" (tiab) OR "insulin resist\*") AND ("Resistance Training"[Mesh] OR "resistance training" OR "strength training" OR "resistance exercise" OR weightlifting OR weight-lifting OR "weight training" OR "weight bearing" OR "strength exercise" OR "strength\* program")

### Cochrane

- **Search entry-** Under title/abstract/keywords- ("Prediabetic State" OR prediabetes OR hyperglycemia OR "impaired fasting glucose" OR "impaired glucose tolerance" OR "glucose intolerant" OR "insulin resistant" OR "insulin resistance" OR "impaired plasma glucose" OR "metabolic syndrome" OR dysglycemia OR "impaired glucose regulation" OR "insulin insensitive") AND ("Resistance Training" OR "strength training" OR "resistance exercise" OR weightlifting OR weight-lifting OR "weight training" OR "weight bearing" OR "strength exercise" OR "strength program")

### Web of Science

- **Search entry-** ("Prediabetic State"[Mesh] OR prediabetes (tiab) OR hyperglycemia (tiab) OR "impaired fasting glucose" (tiab) OR "impaired glucose tolerance" (tiab) OR "glucose intoleran\*" (tiab) OR "insulin resist\*" (tiab) OR "impaired plasma glucose" (tiab) OR "metabolic syndrome" (tiab) OR dysglycemia (tiab) OR "impaired glucose regulation" (tiab) OR "insulin insensitiv\*" OR "insulin resist\*") AND ("Resistance Training"[Mesh] OR "resistance training" OR "strength training" OR "resistance exercise" OR weightlifting OR weight-lifting OR "weight training" OR "weight bearing" OR "strength exercise" OR "strength\* program")

### Embase

- **Search entry-** ('prediabetic state':ti,ab,kw OR 'prediabetes':ti,ab,kw OR 'hyperglycemia':ti,ab,kw OR 'impaired fasting glucose':ti,ab,kw OR 'impaired glucose tolerance':ti,ab,kw OR 'glucose intolerance':ti,ab,kw OR 'glucose intolerant':ti,ab,kw OR 'insulin resistant':ti,ab,kw OR 'insulin resistance':ti,ab,kw OR 'impaired plasma glucose':ti,ab,kw OR 'metabolic syndrome':ti,ab,kw OR 'dysglycemia':ti,ab,kw OR 'impaired glucose regulation':ti,ab,kw OR 'insulin insensitive':ti,ab,kw OR 'insulin insensitivity':ti,ab,kw) AND ('resistance training':ti,ab,kw OR 'strength training':ti,ab,kw OR 'resistance exercise':ti,ab,kw OR 'weightlifting':ti,ab,kw OR 'weight-lifting':ti,ab,kw OR 'weight training':ti,ab,kw OR 'weight bearing':ti,ab,kw OR 'strength exercise':ti,ab,kw OR 'strength program':ti,ab,kw OR 'strengthening program':ti,ab,kw)

### Declarations

**Ethics approval and consent to participate** Not applicable

**Consent for publication** Not applicable

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**Competing interests** Raza Qadir, Nicholas F. Sculthorpe, Taylor Todd, and Elise C. Brown declare that they have no competing interests.

**Availability of data and material** Data supporting the findings of this study are available from the corresponding author on request.

**Author Contributions** ECB and RQ designed the research and conducted the searches and screening. RQ and TT extracted the data, which were verified by ECB. NFS performed the statistical analyses. RQ wrote the manuscript with critical input from ECB and NFS.

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